

## Wiltshire Council



Business



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Buildings  
& Infrastructure



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Natural  
Environment



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### Risk Assessment

**Wiltshire Council undertook an exercise to look at the implications of climate change on the long term resilience of one of their buildings, Trowbridge County Hall.**

The study looked at the climate risks and opportunities for the building, both in the old county hall which was built in the 1930s and the 1970s extension to the hall. The objectives of the study were to gain a comprehensive understanding of the risks that climate change posed to the site, gain an understanding of the severity of the risks, and to look at opportunities to reduce or eliminate risks. Funding from the project was received from the Technology Strategy Board.

The three factors that were studied for climate risks were:

- Design for comfort
- Construction
- Managing water

A risk rating was produced by looking at climate change impacts on a business as usual basis, and the probability of future events occurring taking into account climate projections. Using UKCP09 climate scenarios, future risks were identified looking forward to 2030, 2050 and 2080. This resulted in the identification of low, medium, high and extreme risks to the building. Risks identified for thermal comfort included maintaining comfortable air temperature and radiant temperature. Construction risks included soil subsidence due to changes in soil moisture, wind driven rain and pooling of water on the building. The risks from water management included the increased cost of water in the future, fluvial flood risk from the nearby river and surface water flood risk.

Using the risk rating for the three factors a number of opportunities were identified. For example considering design for comfort,

opportunities to manage risks included a night purge of heat, exposing existing thermal mass, shading of windows and landscaping by planting trees.

Managing construction risks identified the need to check the ability of the building foundations to withstand subsidence, to check the resistance of wall tiles to withstand wind driven rain and to manage on-site drainage.

Opportunities to manage the risks due to water management included looking at using rainwater or greywater harvesting, increasing education around water management, using Sustainable Urban Drainage Systems (SuDS), erecting flood barriers and relocating and raising equipment above the level of potential flood risk.



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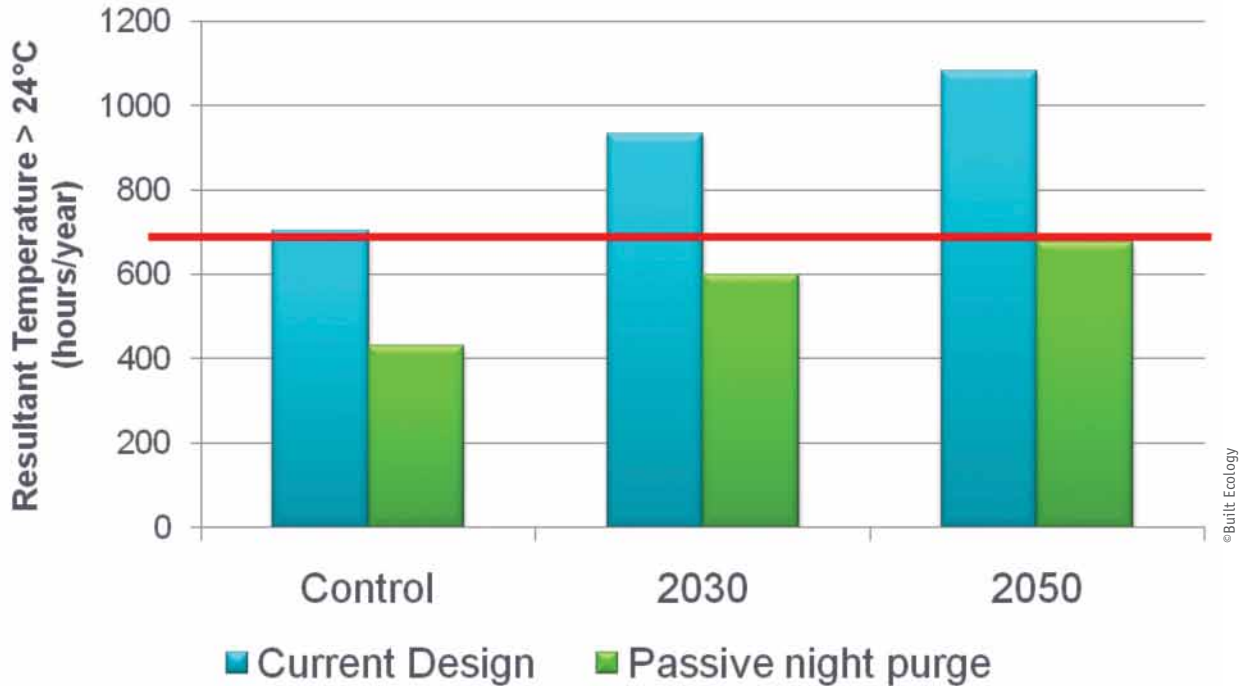


Agriculture & Forestry



Natural Environment

Occupied Hours where Resultant Temperature > 24°C  
OCH Building, 50<sup>th</sup> percentile



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### How is the risk being addressed?

Strategies that were adopted immediately included improvements to the external fabric of the building and undertaking an assessment of the strength of the wall tiles, a water awareness campaign for staff in the building, rainwater recycling, and moving communications equipment from the basement to the ground floor. Possible additional measures were highlighted for future consideration including the use of trees as shading for the building.

The constraint of the study is that it is site specific, so the specific results are not transferable to other locations. However, the risk assessment process is transferable. There were also uncertainties around the potential risks and their measurement, for example uncertainties around the impacts of climate change on water resources and assessing availability.

For more information:

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